Center Innovation Fund: AFRC CIF

Weather Hazard Alert and Awareness Technology Radiation Radiosonde (WHAATRR) Glider

Completed Technology Project (2016 - 2017)

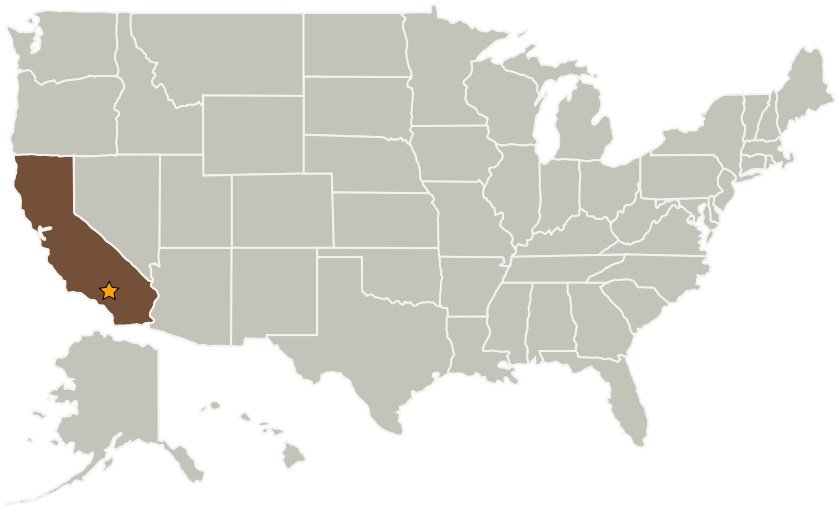
Project Introduction

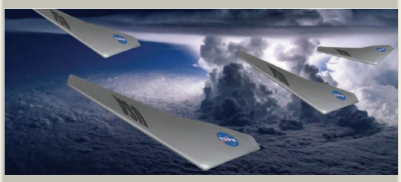
High-Level Research Goals are to develop an onboard, real time weather sensor suite and processors for all aircraft that detects aviation weather hazards, uploads current radar (uses on-board radar for aircraft equipped), networks weather/radiation data with other WHAATRR equipped aircraft, has weather model data for the route of flight at preflight and updates that data during flight. The onboard processor then provides strategic, efficient and safe route changes to auto-pilots, pilots and operators, and distributes weather data to meteorologists and forecast modelers for forecast verification and model improvements and issues warnings with a safe route to avoid the hazard to the pilot and distributes that warning to other aircraft in the vicinity

Anticipated Benefits

Our objective is to develop a small Unmanned Aerial Vehicle (sUAV) that can demonstrate safe flight operations in the National Airspace System (NAS), is capable of replacing the current radiosonde systems utilized worldwide, is reusable, longer in duration, can loiter and target/sense weather/radiation hazards and the surrounding environment.

Primary U.S. Work Locations and Key Partners





An airborne science platform under development at Armstrong could one day provide weather scientists with more accurate, timely, and economical information on weather phenomena.

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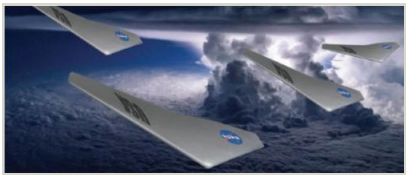
Organizations Performing Work	Role	Type	Location
★Armstrong Flight Research Center(AFRC)	Lead Organization	NASA Center	Edwards, California

Primary U.S. Work Locations
California

Images



Project Image
An airborne science platform under development at Armstrong could one day provide weather scientists with more accurate, timely, and economical information on weather phenomena.
(https://techport.nasa.gov/image/35783)

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Center / Facility:
Armstrong Flight Research Center (AFRC)

Responsible Program:
Center Innovation Fund: AFRC CIF

Project Management

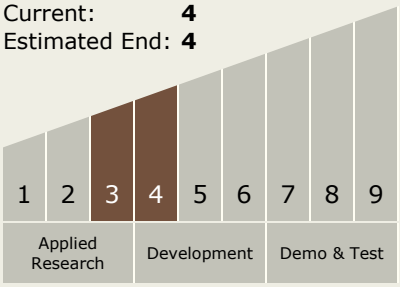
Program Director:
Michael R Lapointe

Program Manager:
David F Voracek

Principal Investigators:
Edward H Teets
Scott L Wiley

Technology Maturity (TRL)

Start: **3**
Current: **4**
Estimated End: **4**



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Technology Areas

Primary:

- TX16 Air Traffic Management and Range Tracking Systems
  - TX16.4 Architectures and Infrastructure

Target Destination

Earth